



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/402,726	10/08/1999	GERHARD KOCK	KOCKPCT	6324

7590 01/17/2007  
COLLARD & ROE  
1077 NORTHERN BOULEVARD  
ROSLYN, NY 11576

EXAMINER
----------

MEI, XU

ART UNIT	PAPER NUMBER
----------	--------------

2615

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.



### **DETAILED ACTION**

1. This communication is responsive to the applicant's amendment dated 10/02/2006.

#### ***Election/Restrictions***

2. Applicant's argument with regard to the Election/Restrictions requirement in the last Office action is considered and deemed persuasive and, therefore, the Election/Restrictions requirement of that action is withdrawn. All pending claims are considered in this office action.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 24, 10, 19, 42, 45, 28, 37, 46, 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohkubo et al. (Hereinafter "Ohkubo") (US Patent 5,862,240)

Regarding Claim 24, Ohkubo discloses at least two acoustic sensors (M1, M2 and M3) for picking up sound emitted from a sound source (Fig. 10, sound source) and converting into electric signals (Fig. 1), said acoustic sensors being spaced from a

Art Unit: 2615

useful zone from which useful signals emanate, said acoustic sensors (M1, M2, M3) having directional characteristics and being oriented so that the axes of their main reception directions are directed towards a reference position within the useful zone (Fig. 10), said acoustic sensors being arranged with the same spacing to the reference portion (M1, M2, M3 are arranged with the same spacing or equal distance from the reference position as shown in Fig. 10), the reference position corresponding to an ideal set position of the sound source, and directional vectors between said reference position and the acoustic sensors point in different directions (Fig. 10); and a common signal amplitude add device electrically or acoustically connected to said acoustic sensors (abstract; Fig. 1, adder 4) for adding or combining the electrical signals received from all the acoustic sensors.

Regarding claim 10, Ohkubo further discloses the acoustic sensors have different distances from the reference position and are arranged in a straight line (Figs. 1, 8, and 11), and with delay elements associated with individual acoustic sensors (It is inherent that signal from microphones will have a propagation delay).

Regarding Claim 19, Ohkubo discloses at least two acoustic sensors (M1, M2, and M3) for simultaneously picking up sound emitted from a sound source (Fig. 10, sound source) and converting into electric signals (Fig. 1), said acoustic sensors being spaced from a useful zone from which useful signals emanate, said acoustic sensors having directional characteristics and being oriented so that the axes of their main reception directions are directed towards a reference position within the useful zone

Art Unit: 2615

(Fig. 10), said acoustic sensors being arranged with differing spacing to the reference position (Fig. 11 discloses deviations in the placements of microphones that is arranged with different spacing to the reference position), the reference position corresponding to and ideal set position of the sound source, and directional vectors between said reference position and the acoustic sensors point in different directions (Fig. 10); a common signal amplitude add device electrically connected to said acoustic sensors (abstract; Fig. 1, adder 4); and delay elements associated with individual acoustic sensors (It is inherent that signal from microphones will have a propagation delay).

Regarding Claims 42 and 45, Ohkubo further discloses the acoustic sensors have different distances from the reference position and are arranged in a straight line (Figs. 1, 8, and 11).

Regarding claims 28 and 37, Ohkubo further discloses three microphones disposed in a single plane which may be arranged on the circumference so they are positioned at equal distances  $R1=R2=R3$  where the surface at least approximately, or in a section, corresponds to a circular element (Fig. 10).

Regarding claims 46-47, see waveguide in Fig. 12 of Ohkubo.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 31, 34, 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo in view of Bowen (US Patent 5,561,737)

Regarding Claims 31, 34, 32 and 35, Ohkubo discloses the sound pickup device as discussed in claims 19 and 24 above. Ohkubo does not disclose an optical marking for indicating the ideal set position of the sound source. Bowen discloses a sound device including light emitting diodes (at least 2 light source) for providing a visual indication to individuals present as to which general area of the room is being covered by the microphones (paragraph bridging columns 3 and 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an optical marker for visually indicating to individuals present in the room as to which are is being covered by the microphones.

7. Claims 33, 35, 43 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo as applied to claim 10 in view of Zakarauskas (US Patent 5,526,433).

Regarding Claims 33 and 43, Ohkubo discloses the sound pickup device as discussed in claims 19 and 24 above. Ohkubo does not disclose the arrangement of the acoustic sensors is automatically adjusted to a modification of the actual position of the sound source so that a reference position of the sound recording device follows the actual position of the sound source. Zakarauskas discloses a self-steering platform with microphones to orient the microphones towards a sound source (Col. 2, lines 1-5).

Art Unit: 2615

Zakarauskas discloses that focusing sound on a desired sound source improves the signal to noise ratio and sound quality (Col. 1, lines 17-24). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include position adjustment to increase the sound quality picked up by the microphones.

Regarding Claims 36 and 11, Zakarauskas further discloses the acoustic sensors are displaced automatically by an automatic drive unit (Fig. 4, drive motor 30 and steering system 122) and controlled by delay elements (comparer 116 and delay system 118).

8. Claim 38, 29 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo as applied to claims 19 and 10 in view of Kaneda et al. (US Patent 4,536,887).

Regarding claims 38, 29 and 49, Ohkubo discloses the sound pickup device as stated apropos of claims 19 and 10 respectively, but does not disclose adjustable transmission coefficients. Kaneda et al. discloses adjusting the delay time of the acoustic sensors (i.e. adjustable transmission coefficients) in order to focus on a desired sound source (Fig. 9; Col. 10, lines 21-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to delay acoustic sensors in order to focus on a desired sound to pick up.

Art Unit: 2615

9. Claims 44 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo/Zakarauskas in view of Sibbald et al. (US Patent No. 5,600,727).

Regarding claim 44 and 48, Ohkubo/Zakarauskas discloses everything claimed as applied above (see claims 10 and 19 above). Ohkubo/Zakarauskas fails to disclose a positive structure for determining the position of the sound source. The claim states that determining the position of the sound source "can be" done by measuring the time delay variances of the sound recorders. Sibbald discloses deriving the distances and displacement of the microphones from a reference point by measuring the time-of-flight measurements, which reads on measuring the time delay variances (abstract) and therefore provides the position of the sound source in relation to the microphones. It would have been obvious to one of ordinary skill in the art to modify Ohkubo in view of Sibbald to provide the position of the sound source via the measurement of the time delay variances of the sound recorders for accurate sound set point position for better overall recording.

***Allowable Subject Matter***

10. Claims 17, 2, 13, 14, 39, 18, 25, 30 and 9 are allowed.

11. Claims 22, 23, 40, 26, 27 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xu Mei whose telephone number is 571-272-7523. The examiner can normally be reached on maxi flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Xu Mei', is written over a horizontal line.

Xu Mei  
Primary Examiner  
Art Unit 2615  
12/22/2006